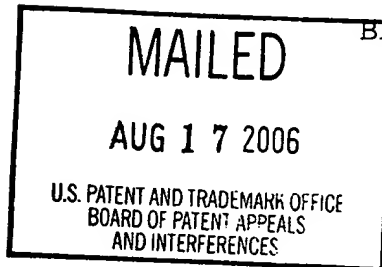


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE



BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEFAN KARL

Appeal No. 2006-1228
Application No. 09/802,982

HEARD: July 25, 2006

Before OWENS, LEVY, and NAPPI, *Administrative Patent Judges*
OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from a rejection of claims 1, 2, 8-15 and 17-23. Claims 3 and 16 have been withdrawn from consideration by the examiner, and claims 4-7 have been canceled.

THE INVENTION

The appellant claims a device comprising heat-pump and air-conditioning branches for heating and/or air conditioning the passenger compartment of a motor vehicle. Claim 1 is illustrative:

1. A device for heating and/or air conditioning the passenger compartment of a motor vehicle, comprising an engine-cooling loop in which a heat-carrying fluid circulates for taking up heat from the engine and returning the heat to an air heater; a heat-pump loop in which a refrigerant fluid circulates, said heat-pump loop containing a compressor, a first evaporator constituting a cold source of the heat jump at which the refrigerant fluid takes up heat from the surroundings, and a first condenser constituting a hot source of the heat pump at which the refrigerant fluid gives up heat, the first condenser being integrated into the engine-cooling loop upstream of the air heater, the device further comprising an air-conditioning branch containing a second condenser and a second evaporator, the air-conditioning branch having an upstream end connected to the heat-pump loop downstream of the compressor, and a downstream end connected to the heat-pump loop upstream of the compressor, and a switching device making it possible to make the refrigerant fluid circulate either in the air-conditioning branch, or in the heat-pump branch, is [sic: in] such a way as to form a heat-pump loop.

THE REFERENCES

Whalen	3,910,345	Oct. 07, 1975
Enomoto et al. (Enomoto)	5,291,941	Mar. 08, 1994
Echigoya et al. (Echigoya)	5,971,290	Oct. 26, 1999
Patryl (French patent)	2,288,278	May 14, 1976
Momose (Japanese Kokai)	59-24134	Feb. 07, 1984
Obara (Japanese Kokai)	63-207709	Aug. 29, 1988
Noda et al. (Noda) (Japanese Kokai)	10-76837	Mar. 24, 1988
Suzuki et al. (Suzuki) (Japanese Kokai)	11-34640	Feb. 02, 1999

1 Citations herein to Patry, Momose, Obara, Noda and Suzuki are to the English translations thereof which are of record.

THE REJECTIONS

The claims stand rejected as follows: claims 12, 15 and 17-23 under 35 U.S.C. § 112, first paragraph, written description requirement; claims 2, 8, 9, 11 and 12 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the appellant regards as the invention; claims 1, 2, 10, 11, 13 and 14 under 35 U.S.C. § 103 over Noda in view of Enomoto; claims 8 and 9 under 35 U.S.C. § 103 over Noda in view of Enomoto and Echigoya; claims 12, 15 and 17-23 under 35 U.S.C. § 103 over Noda in view of Enomoto and Whalen, Momose or Patry; claims 15 and 17 under 35 U.S.C. § 103 over Noda in view of Enomoto and Obara; claims 18 and 19 under 35 U.S.C. § 103 over Noda in view of Enomoto and Suzuki; and claims 12 and 20-23 under 35 U.S.C. § 103 over Noda in view of Enomoto, Obara and Suzuki.

OPINION

We affirm the rejections of claims 1, 2, 10, 11, 13 and 14 under 35 U.S.C. § 103 over Noda in view of Enomoto, and claims 8 and 9 under 35 U.S.C. § 103 over Noda in view of Enomoto and Echigoya, and reverse the other rejections.

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*Rejection of claims 12, 15 and 17-23 under
35 U.S.C. § 112, written description requirement*

The examiner argues that "to the extent that all of these claims can be read to claim some automatic control system of these valves to produce some intended effect on compressor pressure, there simply is no support in the original specification for any type of automatic control" (answer, page 3).

A specification complies with the 35 U.S.C. § 112, first paragraph, written description requirement if it conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, the inventor was in possession of the invention. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991); *In re Kaslow*, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983).

The rejected claims require valve systems for controlling the flow of heat-carrying fluid through a first evaporator and a first condenser. The appellant's specification shows possession of such valves (page 5, lines 9-17), and does not limit the valves to being either manual or automatic. Hence, the specification provides adequate written descriptive support for the recitation of valves generally in the rejected claims.

We therefore reverse the rejection of claims 12, 15 and 17-23 under 35 U.S.C. § 112, first paragraph, written description requirement.

*Rejection of claims 2, 8, 9, 11 and 12
under 35 U.S.C. § 112, second paragraph*

The examiner argues that it is unclear which of the two evaporators or two condensers in claim 1 are referred to in claims 2 and 11 (answer, page 4).

Claim 2, which depends from claim 1, includes "the evaporator of the heat-pump loop". In claim 1, only one heat-pump loop evaporator is recited, and it is referred to as the first evaporator. Claim 11, which depends from claim 1, recites that "the heat-pump loop includes pressure-reducing means for reducing the pressure of the refrigerant fluid between the condenser and the evaporator." It is clear that the condenser and evaporator are those of the heat-pump loop, and claim 1 refers to them, respectively, as the first condenser and the first evaporator. Hence, it is clear which evaporator and condenser in claim 1 are referred to in claims 2 and 11.

The examiner argues that the accumulator in claims 8 and 9 does not exist in elected figure 3 (answer, page 4). That

accumulator, as stated in the specification, is integrated into evaporator 16 (page 12, lines 19-21).

The examiner argues that in claim 12, the first and second valve systems are not well defined and the anti-return valve is not upstream of the evaporator (brief, page 4). The examiner's mere assertion that the first and second valve systems are not well defined is not adequate for establishing that the claim would have been unclear to one of ordinary skill in the art. As for the anti-return valve, the anti-return valve (42) in figure 3 is in the inlet to the evaporator (16) and, therefore, reasonably can be considered to be upstream of the evaporator.

For the above reasons we reverse the rejection of claims 2, 8, 9, 11 and 12 under 35 U.S.C. § 112, second paragraph.

*Rejection of claims 1, 2, 10, 11, 13 and 14
under 35 U.S.C. § 103 over Noda in view of Enomoto*

Noda discloses a motor vehicle passenger compartment heating system comprising a loop wherein hot refrigerant from a compressor (2) passes through a condenser (3) to heat hot water from the engine (1) before the water passes through heater cores (13, 23) that heat air entering the passenger compartment, and the refrigerant that exits the condenser passes through a liquid tank (4) and an expansion valve (5) and then passes through an

evaporator (6) where it takes up heat from water entering the engine (figure 1).

Enomoto discloses a motor vehicle passenger compartment heating and cooling system comprising 1) a main conduit (16) through which refrigerant flows from a compressor (10) through, sequentially, a pressure sensor (104), a first electric valve (181), a condenser (11), a receiver (12), a check valve (24), a first expansion valve (13), a heat exchanger (14), and an evaporator/accumulator (15), and then returns to the compressor, and 2) a bypass conduit (20) through which refrigerant from the compressor flows, sequentially, through the pressure sensor (104), a second electric valve (182), a second expansion valve (22), the heat exchanger (14), and the evaporator/accumulator (15), and then returns to the compressor (figure 1).

The appellant argues that the references provide no motivation to use Enomoto's air conditioning circuit in Noda's system because Noda has no air conditioner and Enomoto already has both heating and cooling circuits (brief, page 12). That motivation would have been to provide air conditioning along with the benefits of Noda's heating system.

The appellant argues that if one of ordinary skill in the art were to combine the teachings of Noda and Enomoto, the resulting system would be one of those sketched by the appellant on pages 14 and 16 of the brief (brief pages 13-16). The sketch on page 14 leaves out Enomoto's condenser (11) upstream of the receiver (12). That condenser is comparable to the appellant's condenser 36. The sketch on page 16 does not provide Enomoto's air conditioning circuit.

The appellant argues that the examiner's proposed combination fails to render obvious a three-way valve switching device that makes it possible to circulate the refrigerant fluid in either the air-conditioning branch or the heat-pump branch in such a way as to form a heat-pump loop (brief, pages 15 and 17).

Such a switching device is Enomoto's electric valves 181 and 182 which can be replaced by a three-way valve (col. 6, lines 1-2).

The appellant argues that unlike the heating circuits of the appellant and Noda, the heating circuit in Enomoto's figure 8 does not include an evaporator (brief, page 17). Noda is relied upon by the examiner for a disclosure of the appellant's heating circuit that includes an evaporator (answer, page 5). Moreover, Enomoto shows an evaporator (15) in the heating circuit in figure 1.

Regarding claim 2 the appellant argues that in Noda's figure 8, the evaporator is downstream of the engine (brief, page 17). Noda does not have a figure 8. The evaporator (6) in figure 1 is upstream of the engine.

With respect to claim 11 the appellant argues that the references fail to disclose a means for reducing the pressure of the refrigerant fluid between the condenser and the evaporator in the heat pump loop (brief, page 18). Such a means is Noda's expansion valve (5).

The appellant does not provide a substantive separate argument as to claims 10, 13 and 14 (brief, page 18).

For the above reasons we are not convinced of reversible error in the examiner's rejection of claims 1, 2, 10, 11, 13 and 14 under 35 U.S.C. § 103 over Noda in view of Enomoto. Accordingly, we affirm that rejection.

*Rejection of claims 8 and 9 under 35 U.S.C. § 103
over Noda in view of Enomoto and Echigoya*

Echigoya discloses a vehicle heat exchange system having an accumulator (66) at the inlet of a compressor (62), and teaches that the accumulator separates the cooling medium into a liquid coolant and a gas coolant, and supplies only gas coolant to the compressor (col. 3, lines 64-67).

The appellant argues that Echigoya's accumulator is not common to both the air-conditioning and heat-pump loops (brief, page 18). The appellant does not argue that the references lack a refrigerant fluid accumulator in the air-conditioning loop as required by claim 8. The appellant's argument pertains only to claim 9. Echigoya's disclosure that the accumulator prevents liquid from entering the compressor would have fairly suggested, to one of ordinary skill in the art, an accumulator at the inlet to the compressor that is common to the heating and air-conditioning loops in Enomoto's system (compressor 10, figure 1).

Regardless, Enomoto's evaporator/accumulator (15) is common to the heating and air-conditioning loops (figure 1).

We therefore affirm the rejection of claims 8 and 9 under 35 U.S.C. § 103 over Noda in view of Enomoto and Echigoya.

*Rejection of claims 12, 15 and 17-23
under 35 U.S.C. § 103 over Noda in view of
Enomoto and Whalen, Momose or Patry*

Whalen discloses a heating and cooling system for a multi-story building (col. 1, lines 4-5).

Momose discloses a calorimeter for an air conditioner (page 1).

Patry discloses a heat pump for air conditioning the interior of a building (page 1).

The examiner argues that because Whalen and Momose (and presumably Patry which, like Whalen, discloses a building air-conditioning system) are in the examiner's search class, the fact that they pertain to different systems is irrelevant (answer, pages 16-17). The mere fact that references are in the same search class does not mean one of ordinary skill in the art would have combined their teachings. There must be some teaching from the prior art itself which would have suggested the combination.

See *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). The examiner has not provided evidence that the applied references themselves would have fairly suggested, to one of ordinary skill in the art, combining the relied upon teachings pertaining to building heating and cooling systems and an air conditioner calorimeter with the vehicle passenger compartment systems of Noda and Enomoto.

The examiner argues that the structures in Noda's figures 3 and 4 are modules (answer, page 16). What the appellant's claim 12 requires is a modular casing containing the recited components, and the examiner has not explained how the applied references would have fairly suggested such a modular casing to one of ordinary skill in the art.

Thus, the examiner has not carried the burden of establishing a prima facie case of obviousness of the appellant's claims 12, 15 and 17-23 under 35 U.S.C. § 103 over Noda in view of Enomoto and Whalen, Momose or Patry. Consequently, we reverse that rejection.

*Rejection of claims 15 and 17 under 35 U.S.C. § 103
over Noda in view of Enomoto and Obara*

Obara discloses a vehicle air conditioner (page 1). The examiner relies (answer, page 7) upon Obara's second water valve (13) which controls the flow rate of hot water into a heater core (12) (page 5). The examiner states that "[t]he examiner has looked but has not found the control of compressor inlet pressure using valve systems such as disclosed by Appellant" (answer, page 17). We therefore reverse the rejection of claims 15 and 17 under 35 U.S.C. § 103 over Noda in view of Enomoto and Obara.

*Rejection of claims 18 and 19 under 35 U.S.C. § 103
over Noda in view of Enomoto and Suzuki*

Suzuki discloses a vehicle heating and cooling system (¶ 0001). The examiner relies (answer, page 7) upon Suzuki's valves 45 for bypass around radiator 42 (¶ 0012). Claims 18 and 19 require a valve system for bypass around a condenser. The

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examiner incorrectly considers Suzuki's radiator to be a condenser (answer, page 7). Because the examiner has not established that the applied prior art would have fairly suggested, to one of ordinary skill in the art, a valve system for bypass around a condenser, we reverse the rejection of claims 18 and 19 under 35 U.S.C. § 103 over Noda in view of Enomoto and Suzuki.

*Rejection of claims 12 and 20-23
under 35 U.S.C. § 103 over Noda in view of
Enomoto, Obara and Suzuki*

The examiner argues that it would have been obvious to one of ordinary skill in the art to combine Suzuki's condenser bypass control valves (45) with the other applied references (answer, page 8). As pointed out above, Suzuki's bypass is around a radiator instead of a condenser. Also, the examiner has not explained how the applied references would have fairly suggested the appellant's modular casing to one of ordinary skill in the art.

We therefore reverse the rejection of claims 12 and 20-23 under 35 U.S.C. § 103 over Noda in view of Enomoto, Obara and Suzuki.

DECISION

The rejections of claims 12, 15 and 17-23 under 35 U.S.C. § 112, first paragraph, written description requirement, and claims 2, 8, 9, 11 and 12 under 35 U.S.C. § 112, second paragraph, are reversed. The rejections of claims 1, 2, 10, 11, 13 and 14 under 35 U.S.C. § 103 over Noda in view of Enomoto, and claims 8 and 9 under 35 U.S.C. § 103 over Noda in view of Enomoto and Echigoya, are affirmed. The rejections of claims 12, 15 and 17-23 under 35 U.S.C. § 103 over Noda in view of Enomoto and Whalen, Momose or Patry, claims 15 and 17 under 35 U.S.C. § 103 over Noda in view of Enomoto and Obara, claims 18 and 19 under 35 U.S.C. § 103 over Noda in view of Enomoto and Suzuki, and claims 12 and 20-23 under 35 U.S.C. § 103 over Noda in view of Enomoto, Obara and Suzuki, are reversed.

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